AMENDMENTS TO THE DRAWINGS

Please amend Figure 1 as follows:

Change the y axis of graph 1 in Figure 1 to "Level (8 bits)".

A replacement sheet is attached herewith.

REMARKS / ARGUMENTS

Status of Claims

Claims 1-23 are pending in the application. Claims 1-23 stand rejected.

Applicant has provided clarifying remarks for consideration upon entry of the present Response.

Applicant respectfully submits that the rejections under 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Requirement for Information

The Examiner has requested information under 37 CFR 1.105 regarding whether a rejection was made in a corresponding foreign application and to submit a copy if such a rejection was made. Applicant's investigation finds corresponding foreign applications in JP, DE and FR, finds no rejections issued in any of the corresponding foreign applications, finds no foreign search reports in JP or DE, and finds a foreign search report in FR. The FR foreign search report included two references listed as either category X or category Y, which were filed in an IDS on November 25, 2003. A copy of the FR foreign search report is attached herewith. Applicant believes this reply to be a complete reply required under 37 CFR 1.105.

Drawings

The drawings are objected to because the y axis of graph 1 in Figure 1 should be "Level (8 bits)" instead of "Level (18 bits)". Applicant submits herewith a replacement sheet including the requested drawing amendment. No new matter has been added as antecedent support can be found in the application as originally filed, such as at paragraph [0010] for example. Accordingly, Applicant submits that the objection to the drawing has been overcome, and respectfully requests reconsideration and withdrawal of the objection.

Specification

The specification is objected to because "low-past" in paragraph [0023] should be "low-pass". Applicant has amended paragraph [0023] to incorporate the correction to the typographical error. No new matter has been added. Accordingly, Applicant submits that the objection to the specification has been overcome, and respectfully requests reconsideration and withdrawal of the objection.

Rejections Under 35 U.S.C. §103(a)

Claims 1-15 and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nicolas et al. (European Patent Application EP 1 113 392, hereinafter "Nicolas") in view of Neitzel et al. (U.S. Patent No. 5,550,888, hereinafter "Neitzel") and Langan et al. (WO 01/69532, hereinafter "Langan").

Claims 16-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Neitzel and Langan as applied to Claim 1 above, and further in view of J. Kaufhold et al. "A Calibration Approach to Glandular Tissue Composition Estimation in Digital Mammography", (hereinafter "Kaufhold").

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nicolas, Neitzel and Langan as applied to Claim 22 above, and further in view of common knowledge in the art as shown by Gonzalez et al., "Digital Image Processing," Prentice-Hall, Inc., page 85.

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Dependent claims inherit all of the limitations of the respective parent claim and any intervening claim.

Regarding Independent Claim 1

The Examiner acknowledges that the combination of Nicolas and Neitzel fail to teach or suggest the claimed *compressing the dynamic range of the image with reduced dynamic range and heightened contrast*, and alleges that page 6, lines 8-24 of Langan cures the deficiency.

Applicant respectfully disagrees.

In comparing the combination of Nicolas, Neitzel, and Langan with the claimed invention, Applicant finds Langan to teach "...performing a contrast-based dynamic range management (D-DRM) algorithm, to ***compress input image data*** of a broad dynamic range of intensities to a reduced dynamic range (e.g., 256 levels) of an available display device ...." (emphasis added) [Langan, page 6, lines 8-12], and submits that Langan is absent a teaching of the claimed ***compressing the dynamic range of the image with reduced dynamic range and heightened contrast***.

Applicant submits that the teaching of Langan to compress the dynamic range of ***input image data*** is substantially different than the claimed ***compressing the dynamic range of the image with reduced dynamic range and heightened contrast***. Applicant submits that ***input*** image data (the claimed *image of an object*) includes at least, two processing and one adding together step, to be transformed into the claimed ***image with reduced dynamic range and heightened contrast*** prior to the ***compressing the dynamic range of the image with reduced dynamic range and heightened contrast***. Accordingly, Applicant submits that while Langan teaches a dynamic range compression of ***input image data***, Langan is absent a teaching of ***compressing the dynamic range of the image with reduced dynamic range and heightened contrast***. Therefore, Applicant submits that Langan fails to cure the deficiency of the combination Nicolas and Neitzel to teach or suggest the claimed ***compressing the dynamic range of the image with reduced dynamic range and heightened contrast***.

Applicant further finds Langan to teach "...The ADD 78 performs an addition of the outputs of LUT 76 and bit extractor 77 and produces the final result Y. LUT 79 ***clips*** the output of LUT 78 to ensure an 8 bit result..." (emphasis added) [Langan, p. 18, lines 23-24].

Applicant submits that "clip" is defined as "to cut, or cut off or out, as with shears" [clip. (n.d.). *Dictionary.com Unabridged (v 1.1)*. Retrieved May 30, 2007, from Dictionary.com website]. Applicant therefore submits that Langan teaches ensuring the 8-bit ***via truncating (clipping)*** the output of LUT 78. Accordingly, Applicant submits that to truncate (clip) the output of LUT 78 is substantially different from the claimed ***compressing the dynamic range of the image with reduced dynamic range and heightened contrast***, which includes a ***conversion*** (as described at Paragraph [0033]) of the image, for example, from 12 bits to 8 bits, while keeping the possibility of displaying several eight-bit representations of the digital image encoded on 12 bits. Applicant submits that removal (clipping) of extraneous image data to 8 bits precludes the possibility of displaying several eight-bit representations of the image encoded on 12 bits. As such, Applicant submits that the claimed invention functions substantially different from the combination of prior art references proposed by the Examiner.

Accordingly, Applicant submits that the teaching of Langan to clip the output of LUT 78 to ensure an 8 bit result is absent any teaching or suggestion of the claimed ***compressing the dynamic range of the image with reduced dynamic range and heightened contrast*** and for at least this reason, the combination of Nicolas, Neitzel, and Langan fail to teach each and every element of the claimed invention arranged in such a manner to perform as the claimed invention performs.

Accordingly, applicant respectfully submits that the combination of Nicolas, Neitzel, and Langan fail to teach each and every element of the claimed invention arranged in such a manner to perform as the claimed invention performs, and therefore cannot support a prima facie case of obviousness.

Regarding Claim 22

To allege obviousness of Claim 22, the Examiner asserts "Nicolas discloses determining a threshold based upon a histogram of the object in the image of the radiological thicknesses and defining regions of the object based upon the threshold (see for example the abstract)." [paper 20070416, page 7]

Applicant respectfully disagrees.

Applicant finds Nicolas to teach "...the pixels having a level below or above a predetermined threshold being returned at least to the value of the threshold, while ***preserving the differences and real ratios*** between the anatomical structures." [Nicolas, Abstract]

Applicant respectfully submits that ***preserving differences and real ratios*** between anatomical structures is substantially different from the claimed ***defining regions of the object*** based upon the threshold. Applicant submits that ***preserving*** differences and real ratios provides a transformation that merely maintains a particular observable ***relative state*** of images of the anatomical structures, which is distinguishable from the claimed ***defining*** *(or segmenting the object into)* ***regions*** of the object based upon the threshold.

Furthermore, Applicant finds Neitzel to teach "The invention enables the user to preset the contrast and the density of the visible image in conformity with his requirements and independently from one another." [Neitzel, Abstract] and Langan to teach "A method and apparatus ... for performing a contrast-based dynamic range management (C-DRM) algorithm" [Langan, Abstract], and submits that neither Neitzel nor Langan teach the claimed ... ***defining regions of the object based upon the threshold.***

Accordingly applicant respectfully submits that the combination of Nicolas, Neitzel, and Langan fails to teach each and every element of the claimed invention arranged in such a manner to perform as the claimed invention performs, and therefore cannot support a prima facie case of obviousness.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention arranged to perform as the claimed invention performs and are therefore wholly inadequate in their teaching of the claimed invention as a whole, and disclose a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the foregoing remarks and amendments, Applicant respectfully submits that foregoing clarifying remarks comply with 37 C.F.R. §1.116 and in consideration thereof, the Examiner's rejections under 35 U.S.C. §103(a) have been traversed, and that the application is now in condition for allowance. Such action is therefore respectfully requested.

If a communication with Applicant's Attorneys would assist in advancing this case to allowance, the Examiner is cordially invited to contact the undersigned so that any such issues may be promptly resolved.

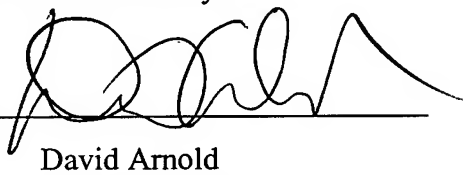
The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 50-2513.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

Applicant's Attorneys

By: 

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